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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Customer No. 23643

Group: 1711

Confirmation No.: 4458

Application No.: 09/978,326

Invention: POLYAMIDEIMIDE COMPOSITIONS

Inventor: James J. Xu

Filed: October 16, 2001

Attorney

Docket: 19763-82069

Examiner: Melanie D. Bissett

Certificate Under 37 CFR 1.8(a)

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450

on October 21, 2004

Kevin L. McLaren
(Signature)

Kevin L. McLaren

(Printed Name)

DECLARATION UNDER 37 C.F.R. § 1.131

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

I, James J. Xu, a citizen of the United States of America and resident of Fort Wayne, Indiana, do declare and say that:

1. I am the named inventor on the captioned application for patent filed on October 16, 2001. I understand that the Examiner has rejected claims 32 and 33 of the application under 35 U.S.C. § 103(a) over Koerner et al. (U.S. Patent No. 3,937,673) in view of Yin et al. (U.S. Patent Application Publication No. US 2001/0018981 A1); Waki (U.S. Patent No. 4,477,624) in view of Yin et al., Koerner et al. in view of Fujikura TLD (JP 05320340A-2 abstract) and further in view of Yin et al., and finally Waki in view of Fujikura TLD and further in view of Yin et al. Each of these combinations includes U.S. Patent Application Publication No. US 2001/0018981 A1 to Yin et al., published September 6, 2001, on an application filed January 29, 2001.

2. The invention described and claimed in the captioned application was conceived and reduced to practice in this country prior to January 29, 2001, the filing date of the patent application of Yin et al. that is cited by the Examiner.

3. The claimed composition, as defined by claims 32-33 of the captioned application is a craze resistant coating for magnet wires that is formed from the reaction products of (i) an aromatic diisocyanate, (ii) at least about 75 mole percent of trimellitic anhydride; and (iii) about 25 mole percent or less of one or more acid, anhydride, and/or hydroxy functional reactants, where the aggregate amount of the trimellitic anhydride, and the acid, anhydride and hydroxy functional reactants is substantially the molar equivalent of the amount of the aromatic diisocyanate. The acid, anhydride, and hydroxy functional reactants are selected from benzophenonetetracarboxylic anhydride, p-phthalic acid, o-phthalic acid, m-phthalic acid, 4,4'-oxy-bisbenzoic acid, dicarboxyl terminated poly(acrylonitrile-co-butadiene), adipic acid, diphenylsilanediol, tris(2-hydroxyethyl)cyanurate, cyanuric acid, melamine derivatives, and vinyl terminated silicone oil. This composition as defined by claim 32 also includes a mineral filler. This composition as defined by claim 33 also includes a mineral filler and polytetrafluoroethylene.

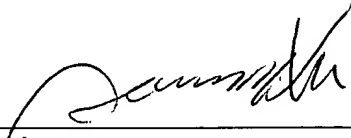
4. Exhibit A attached hereto (page 1 of 7) is a photocopy of a Patent Disclosure Letter that I generated prior to January 29, 2001, and which has been redacted. This Letter documents the new invention described in the captioned application. This Patent Disclosure Letter describes a craze resistant wire coating composition, as it is defined by claims 32 and 33; the wire coating composition described in the letter includes (1) a polyamideimide prepared from the claimed range of molar ratios of diisocyanate, trimellitic anhydride, and acid, anhydride, and hydroxy functional reactants; and (2) a particulate component dispersed in the coating comprising a mineral filler, or a mixture of a mineral filler and polytetrafluoroethylene.

5. The coating composition described in the Patent Disclosure Letter was prepared by me in a laboratory at Phelps Dodge Industries, Inc., Fort Wayne, Indiana, USA. The date of preparation and testing of the composition, and of the Letter was prior to January 29, 2001, the filing date of the patent application of Yin et al. (U.S. Patent Application Publication No. US 2001/0018981 A1).

I declare further that all statements made herein of my own knowledge are true, and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title

18 of the United States Code, and that such willful false statements may jeopardize the validity of the application, or any patent issuing thereon.

Dated: 9-14-04

By: 
James J. Xu

J.J. Xu, Solvent induced Craze Resistant Polyamideimide Composition, [REDACTED]

Patent Disclosure Letter: [REDACTED]

**Solvent Induced Craze Resistant
Polyamideimide Composition**

James J. Xu
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*APPROVED TO
FILE PATENT
APPLICATION.*

[Signature]
[REDACTED]

ABSTRACT

A method for preparing a polyamideimide composition for magnet wire application, which possesses the reduced residual thermal stress of the formed films and resistance to solvent induced crazing, especially to varnish-induced crazing. Several methods to minimize the varnish craze have been invented. Generally, the methods comprise (1) restricting the mobility of polyamideimide chains by means of adequate curing and increasing both molecular rigidity and flexibility (2) dispersing and redistributing the residual thermal stress of the film by incorporating fine particles. The polyamideimide is composed of 1.005-1.0 mole of MDI, 0.8-1.0 mole of TMA, 0.2-0.02 mole of aromatic diacid, and 0.03 to 0.10 mole of aliphatic diacid. The diisocyanate and diacid or TMA are stoichiometrically equivalent. The said fine particles are polymers and inorganic fillers such as PTFE, MoS₂, TiO₂, SiO₂, etc. The amount of these particles are in the range of 0.5%-10%, [REDACTED].

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]